

Amendment to the Claims:

Please cancel claims 26, 31 to 33, 35 and 38 to 44, without prejudice

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): An isolated or recombinant polynucleotide comprising a ~~member selected from the group consisting of:~~

——(a)—— a polynucleotide having at least [[a]] 70% sequence identity to a polynucleotide encoding an enzyme comprising ~~the~~ an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity; ~~and~~

——(b)—— a polynucleotide that is completely complementary to a polynucleotide of (a).

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Claim 2 (Currently Amended): The polynucleotide of claim 1, wherein the polynucleotide is comprises a DNA.

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Claim 3 (Currently Amended): The polynucleotide of claim 1, wherein the polynucleotide is comprises an RNA.

Claim 4 (Previously Amended): The polynucleotide of claim 2, which encodes an enzyme comprising amino acids 1 to 346 of SEQ ID NO:4.

Claim 5 (Currently Amended): An isolated or recombinant polynucleotide comprising a ~~member selected from the group consisting of:~~

——(a)—— a polynucleotide having at least a 90% identity to a polynucleotide encoding an enzyme having a sequence as set forth in SEQ ID NO:4 and having alpha galactosidase activity; ~~and~~

——(b)—— a polynucleotide ~~complementary to a polynucleotide of (a).~~

Claim 6 (Currently Amended): A vector comprising the ~~DNA of claim 2~~  
polynucleotide of claim 1.

Claim 7 (Currently Amended): A host cell comprising the vector of claim ~~13~~ 6.

Claim 8 (Currently Amended): A process for producing a polypeptide  
comprising expressing from the host cell of claim ~~14~~ 7 a polypeptide encoded by said DNA, or  
expressing from a host cell the polynucleotide of claim 1.

Claim 9 (Previously presented): A process for producing a cell that expresses the  
polypeptide encoded by a DNA contained in a vector comprising transforming or transfecting the  
cell with the vector of claim 6.

Claims 10 to 12 (Canceled)

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Claim 13 (Currently Amended): The polynucleotide of claim 1, wherein the  
polynucleotide has at least 95% identity to ~~[[a]] the polynucleotide encoding the amino acid~~  
~~sequence set forth in SEQ ID NO:4 and encodes a protein having alpha-galactosidase activity.~~

Claim 14 (Currently Amended): The polynucleotide of claim 13, wherein the  
polynucleotide has at least 97% identity to ~~[[a]] the polynucleotide encoding an alpha~~  
~~galactosidase comprising the amino acid sequence set forth in SEQ ID NO:4.~~

Claims 15-16 (Canceled)

Claim 17 (Previously presented): The polynucleotide of claim 2, wherein the  
DNA is cDNA or synthetic DNA.

Claim 18 (Previously presented): The polynucleotide of claim 2, wherein the  
DNA is single stranded.

Claim 19 (Currently Amended): The polynucleotide of claim 18, wherein the single stranded DNA ~~[[is]]~~ comprises a coding sequence of a polypeptide having alpha galactosidase activity.

Claim 20 (Previously presented): The vector of claim 6, wherein the DNA is operably linked to an expression control sequence suitable to direct mRNA synthesis.

Claim 21 (Currently Amended): The vector of claim 6, wherein the vector is comprises a plasmid, a viral particle, or a phage.

Claim 22 (Currently Amended): The vector of claim 6, wherein the vector is comprises an expression vector.

Claim 23 (Previously presented): The polynucleotide of claim 2, operably linked to an expression control sequence.

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Claim 24 (Currently Amended): An isolated or recombinant polynucleotide that hybridizes to a polynucleotide that encodes a polypeptide having a sequence as set forth in SEQ ID NO:4, or a complement thereof, and wherein the polypeptide has alpha galactosidase activity, and the hybridizing conditions include 0.9 M NaCl, 50 mM NaH<sub>2</sub>PO<sub>4</sub>, pH 7.0, 5.0 mM Na<sub>2</sub>EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C.

Claim 25 (Currently Amended): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotide that encodes SEQ ID NO:4 comprises SEQ ID NOS:1, 2, or 3.

Claim 26 (Canceled)

Claim 27 (Currently Amended): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotides hybridize under conditions further comprising a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na<sub>2</sub>EDTA) containing 0.5% SDS at room temperature.

Claim 28 (Currently Amended): The isolated or recombinant polynucleotide of claim ~~27~~24, wherein the wash step further comprises another wash in fresh 1X SET at T<sub>m</sub>-10°C, wherein T<sub>m</sub> is a melting temperature for hybridized polynucleotides.

Claim 29 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ comprising ~~a nucleic acid sequence of a portion~~ at least 12 contiguous nucleotides of the isolated polynucleotide of claim 1 or claim 24 ~~claims 1, 5, or 24, wherein the fragment~~ encodes a polynucleotide having alpha galactosidase activity.

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Claim 30 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ comprising ~~a nucleic acid sequence of a portion~~ at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4, ~~wherein the fragment encodes a polypeptide having~~ alpha galactosidase activity.

Claims 31 to 33 (Canceled)

Claim 34 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ consisting of ~~a nucleic acid sequence that is a portion~~ at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4 set forth in SEQ ID NOS:1, 2, or 3, and wherein the isolated or recombinant nucleic acid comprises one of a pair of primers ~~capable of identifying~~ capable of amplifying a polynucleotide encoding a polypeptide having alpha galactosidase activity or is capable of hybridizing to a nucleic acid encoding a polypeptide having alpha galactosidase activity under conditions including 0.9 M NaCl, 50 mM NaH<sub>2</sub>PO<sub>4</sub>, pH 7.0, 5.0 mM Na<sub>2</sub>EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C and a

wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na<sub>2</sub>EDTA) containing 0.5% SDS at room temperature.

Claim 35 (Canceled)

Claim 36 (Currently Amended) The isolated or recombinant nucleic acid fragment of claim 29, claim 30 or claim 34, wherein the sequence is at least 30 bases.

Claim 37 (Currently Amended) The isolated or recombinant nucleic acid fragment of claim 36 29, wherein the sequence is at least 50 bases.

Claims 38 to 41 (Canceled)

Claim 42 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid fragment of claim 29.

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Claim 43 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid fragment of claim 30.

Claim 44 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid fragment of claim ~~31~~ 34.

Claim 45 (Currently Amended) A polynucleotide probe comprising ~~the~~ a nucleic acid comprising a fragment of any one of the isolated or recombinant nucleic acid as set forth in claim ~~claims~~ 32- 34.

Claim 46 (NEW) An isolated or recombinant nucleic acid completely complementary to a nucleic acid having at least a 70% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 47 (NEW) The isolated or recombinant nucleic acid of claim 46, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 80% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 48 (NEW) The isolated or recombinant nucleic acid of claim 47, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 90% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 49 (NEW) The isolated or recombinant nucleic acid of claim 48, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 95% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

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Claim 50 (NEW) The isolated or recombinant nucleic acid of claim 49, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 97% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 51 (NEW) An isolated or recombinant nucleic acid comprising a sequence of at least 12 contiguous nucleotides of a complementary strand of an isolated polynucleotide as set forth in claim 1.

Claim 52 (NEW) An isolated or recombinant nucleic acid comprising a sequence of at least 12 contiguous nucleotides of a complementary strand of a polynucleotide encoding SEQ ID NO:4.

Claim 53 (NEW) The isolated or recombinant nucleic acid of claim 51 or claim 52, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 15 nucleotides.

Claim 54 (NEW) The isolated or recombinant nucleic acid of claim 53, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 30 nucleotides.

Claim 55 (NEW) The isolated or recombinant nucleic acid of claim 54, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 50 nucleotides.

Claim 56 (NEW) The isolated or recombinant nucleic acid of claim 51 or claim 52, wherein the sequence comprises a sense strand or an antisense strand.

3 Claim 57 (NEW) The isolated or recombinant polynucleotide of claim 1, wherein the isolated or recombinant polynucleotide has at least a 80% sequence identity to a nucleic acid encoding an enzyme comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 58 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose.

Claim 59 (NEW): The isolated or recombinant polynucleotide of claim 58, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose in beans.

Claim 60 (NEW): The isolated or recombinant nucleic acid of claim 1, wherein the polynucleotide comprises a sense sequence or an antisense sequence.

Claim 61 (NEW): The polynucleotide of claim 18, wherein the single stranded DNA comprises an antisense sequence.

Claim 62 (NEW): The isolated or recombinant nucleic acid fragment of claim 29, claim 30 or claim 34, wherein the sequence is at least 15 bases.

Claim 63 (NEW): An isolated or recombinant polynucleotide comprising a polynucleotide encoding polypeptide having a sequence as set forth in SEQ ID NO:4.

Claim 64 (NEW): The host cell of claim 7, wherein the cell is a bacterial cell, a fungal cell, a yeast cell, an insect cell, a plant cell or an animal cell.

Claim 65 (NEW): The host cell of claim 64, wherein the animal cell is a mammalian cell.

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Claim 66 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 95% sequence identity to the polynucleotide encoding the enzyme.

Claim 67 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 97% sequence identity to the polynucleotide encoding the enzyme.

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